Climate

The Short Trip with Big Impacts:

Walking, Biking and Climate Change

Transportation is a leading source of climate pollution representing approximately 30 percent of overall U.S. emissions in 2005 (EPA 2007). It is also the fastest rising source of CO2 emissions.

Steady increases in vehicle use will negate improvements in fuel efficiency and alternative fuels use (CCAP 2007). Travel demand, with walking, biking and transit as key elements, must become a central part of the national strategy to manage climate change.

Short trips under three miles represent nearly half of all trips (FHWA 2006), but cars are the dominant mode. With most trips within a 15- to 20-minute bike ride, many of these trips are ripe for conversion to walking and biking.

Walking and biking currently have a much stronger impact on climate management than the much ballyhooed Toyota Prius. In Minneapolis, for instance, the Prius would have to comprise 12 percent of the rolling fleet to equal the current contribution of biking and walking. The actual market share of Prius today is less than one per of the new car market.

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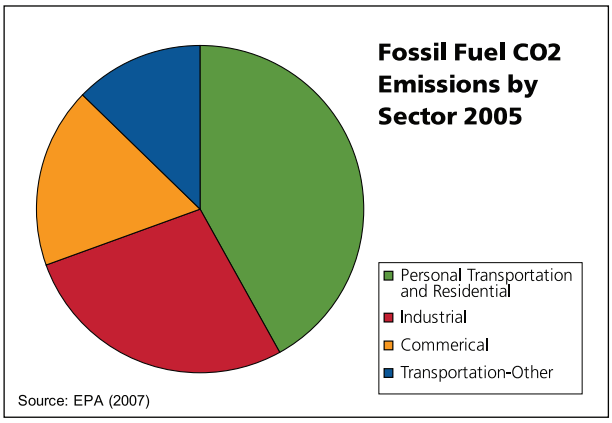
Global Consensus and Local Actions: Climate Change and Main Street

Climate change has become an increasingly important policy issue. We have moved into an era of not only scientific consensus, but also increasing political acceptance that climate change is a major societal problem. While the issue can seem extraordinarily complex, small changes in the everyday patterns of Americans can have a large impact on the driving force behind climate change, carbon emissions. Carbon emissions come from obvious sources like large industrial operations and from less intensive but more widespread daily operations like the burning of gas to drive from place to place and to heat and cool our homes. While industrial practices represent a large share of emissions (28 percent), the decisions of individuals in the residential and personal transportation sectors, taken cumulatively, represent a leading source of current emissions (42 percent) (EPA 2007). Small changes to daily routines and practices can add up to large changes in emissions. The transportation sector is particularly ripe for these small individual changes with large cumulative impacts.

Mainstreaming Transportation Choices: Taking Walking and Biking Seriously

The transportation sector is a major source of U.S. carbon emissions. Transportation is responsible for one-third of U.S. CO2 emissions, and is the fastest growing major source in the U.S. economy. Further, private automobiles are responsible for 62 percent of transportation-related CO2 emissions (EPA 2006). Given this context, non-polluting forms of transportation such as biking and walking could represent an important strategy for reducing CO2 emissions.



While walking and biking provide a clean and healthy source of community transportation, increasing the share of trips taken by walking and biking has received comparatively little attention compared to improved auto fuel efficiency and alternative fuels. While improved fuel efficiency and alternative fuels are a vital part of a comprehensive transportation climate change strategy, relentlessly rising vehicle miles traveled (VMT) have long been the driver of increased emissions in the sector. VMT is forecast to grow by 59 percent by 2030 (Repogle 2007). Analysis from the Center for Clean Air Policy shows that technological fixes alone cannot deliver the 80 percent reduction in emissions that scientists indicate are needed by 2050 (CCAP 2007). Managing travel demand by shifting trips to active modes like walking and biking needs to become a central part of the national strategy to manage climate change.

A travel demand strategy centered on walking, biking and transit has the potential to carry a significant part of the transportation load. Short trips under three miles represent nearly half of all trips (FHWA 2006). The policy implications of this trip breakdown could be enormous: nearly half of all trips are within a healthy and relatively easy 15- to 20-minute bike ride. While at present the preponderance of trips are taken by private automobile, many more of these trips can be converted to biking, walking and transit with the right investments in infrastructure and programs.

Active Transportation Models: Portland and Minneapolis

Portland, Ore., and Minneapolis, Minn., are two examples that show how concerted investments in walking and biking infrastructure and programs that help provide real personal transportation choices result in significant improvements in walking and biking mode share. Portland's investment in active transportation infrastructure is paying off in increased walking and biking. Portland was the first U.S. government to adopt a climate action plan in 1993 in which active transportation was given a central role. Portland has built more than 100 miles of trails and bike lanes just since 2001. This and earlier investments in infrastructure and programming have resulted in a quintupling of bike miles traveled over the last 15 years (City of Portland 2005).

Portland is not alone in showing that commitment to active transportation can have large impacts in reducing emissions. Minneapolis, one of the Nonmotorized Transportation Pilot Project communities, has shown a consistent commitment to investing in active transportation infrastructure. A recent study by the University of Minnesota tracking the progress of the Pilot communities found that roughly 20 percent of all trips in Minneapolis are currently taken by walking and biking. When transit—which is accessed in Minneapolis by walking and biking 88 percent of the time—is considered, the figure jumps to nearly 28 percent. The cases of Minneapolis and Portland show that when you build facilities for walking and biking, the community responds by using them for their transportation needs. With targeted investment, active transportation can be a mainstream component of a climate action strategy.

Active Transportation: A Mainstream Climate Strategy

Recent studies have shown that making communities more bike/pedestrian-friendly can make a significant contribution to overall greenhouse gas emissions

A crosssection of commuting in Arlington, Va., with subway, freeway traffic and trail travel.

by driving down VMT. Overall, creating bicycle/pedestrian-friendly communities can result in between a five to 15 percent reduction in overall VMT in a community (Litman 2007). These figures can be even higher in close proximity to bike/pedestrian facilities with local reductions of 20 to 30 percent (CCAP 2007).

To put the overall numbers in context, consider that the much ballyhooed Toyota Prius would have to comprise 12 percent of the rolling fleet to equal the current contribution of biking and walking in Minneapolis under status quo conditions. The actual market share of Prius today is less than one percent of the new car market. Walking and biking are mainstream components of a strong climate change management strategy today. With increased investment, the potential for this clean and healthy transportation mode to help decrease carbon emissions can be significant.

- In 2003, 27 percent of the greenhouse gas emissions in the United States were from the transportation sector. Almost two thirds of transportation emissions (62 percent) are from personal transport, such as passenger cars, light duty trucks and motorcycles (EPA 2006).
- Transportation continues to be the fastest-growing source of greenhouse gas emissions in the United States. Overall American vehicle travel has increased, outpacing population growth (CCAP 2007).
- Improving the fuel economy and technology of passenger vehicles can significantly help reduce emissions, but they alone will not provide the 80 percent reduction that scientists claim we need to reach by 2050 (CCAP 2007).
- Community design is also an integral factor in motorized travel. A well-connected community will have common trip destinations close together and will be accessible by a variety of modes. Studies show that sprawl, more so than income or population, has a significant influence on vehicle miles traveled, and therefore carbon emissions (CCAP 2007).
- Five to 15 percent fewer vehicle miles are traveled in "communities with good walking and cycling conditions than in more automobile-dependent areas" (Litman 2007).
- In typical U.S. cities with more than 250,000 people, "each additional mile of Type 2 bike lanes per square mile is associated with a roughly one percent increase in the share of workers commuting by bicycle. This level of increase in Type 2 bike lane mileage is significant – almost four times the current average of 0.34 miles per square mile" (Dill and Carr 2003).
- Local reductions in VMT of 20 to 30 percent result from increased transit use, walking and bicycling as modes of transportation (CCAP 2007).

Bicycling is encouraged in Portland, Ore., where the city trams are equipped with bike racks.

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